

ENVIRONMENTAL SELF-ASSESSMENT FOR THE FOOD PROCESSING INDUSTRY

**A QUICK AND EASY CHECKLIST OF
POLLUTION PREVENTION MEASURES
FOR THE FOOD PROCESSING INDUSTRY**

March 2001

Prepared for the Food Processing Industry in New York State
by
New York State Department of Environmental Conservation
Pollution Prevention Unit



George E. Pataki, Governor
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INTRODUCTION

The purpose of this manual is to assist New York State food processors in the development of an effective pollution prevention program or to improve programs which may already be in place. Implementing an effective pollution prevention program requires a continuous commitment by a wide range of food processing personnel.

Food processors that practice pollution prevention benefit the environment by producing less waste and reducing the transfer of waste from one environmental medium to another. In addition, business performance improves through greater efficiency, wiser energy use, increased product quality and enhanced public image.

The *Environmental Self-Assessment for the Food Processing Industry* will help your business to assess its present performance in preventing pollution and identify opportunities for additional pollution prevention measures. If your business has limited resources, the self-assessment will serve as a preliminary diagnostic tool to use before seeking any outside assistance.

Technical assistance may be available from vendors, consulting engineers, professional organizations and the internet. Assistance is available from state and local environmental agencies, such as the New York State Department of Environmental Conservation's Pollution Prevention Unit or its regional multimedia pollution prevention coordinators. The New York State Environmental Facilities Corporation also provides free, confidential technical assistance

to small businesses under its Small Business Assistance Program (see "A Resource Guide," page 15, for a list of agencies, organizations and sites on the internet that can provide technical information and assistance).

An environmental self-assessment can prove worthwhile as a preventive strategy in much the same way that an internal financial audit helps your business avoid violations of local, state and federal tax laws. It can identify process changes and housekeeping measures that will prevent damage to the environment and help your business comply with environmental requirements.

The checklists found in the self-assessment are designed to test a facility's performance in pollution prevention, waste reduction and recycling. To conduct a self-assessment for compliance with environmental rules and regulations, you should obtain *The Environmental Self-Audit For Small Businesses*. This document, which identifies possible environmental compliance problems in the general regulatory categories of air, water, land use, solid waste and hazardous materials, helps small businesses in New York State comply with local, state and federal environmental regulations. It contains information for the business that is about to begin operations, for the existing business that has never examined the environmental impact of its operations and for the business that is about to move, expand or embark on a new venture.

ENVIRONMENTAL SELF-ASSESSMENT FOR FOOD PROCESSORS

The following checklist is a guide designed to be used by anyone involved in the day-to-day operations of a food processing facility. These include facilities that process and package fruits, vegetables, meat, dairy, fish, beverages and baked goods using operations such as refrigeration, canning and freezing. Processing operations can produce waste in a variety of forms such as wastewater, solid waste and air emissions. To have a successful pollution prevention program, routine environmental self-assessments should be conducted. The self-assessments help identify opportunities to incorporate pollution prevention measures in all aspects of food processing operations.

Review each section of the self-assessment with the manager and staff members who are most familiar with a particular activity in the facility. Responses to the questions should show whether potential hazards or polluting activities are occurring that can be addressed by an operational change, product substitution or changes to cleanup procedures.

This self-assessment is only one in a series of steps that your facility should take to determine its regulatory compliance and to identify suitable methods of waste reduction. The checklist is most effective when used with related tools, such as workshops and other publications. For many facilities, this self-assessment will be as useful as a thermometer is for a person with a fever: symptoms may be measured, but an expert opinion may be needed to diagnose the problem and develop corrective measures.

The Environmental Self-Assessment for Food Processors was developed for use with the *Environmental Compliance and Pollution Prevention Guide to the Food Processing*

Industry. Following completion of the self-assessment, consult this guide for additional information on the nature and type of pollution prevention techniques that have been applied by other food processing facilities. Both documents are available through the NYSDEC Pollution Prevention Unit's website at www.dec.state.ny.us/website/ppu.

Progressive facilities will use the environmental self-assessment to achieve two goals: to evaluate current facility practices and to develop an ongoing program in pollution prevention.

Don't be discouraged by the sometimes difficult process of identifying and addressing environmental problems. Over the long haul, the measurable benefits of conducting and responding to regular environmental self-assessments may include reductions in the following: environmental hazards, enforcement, fines, insurance rates, waste handling costs and accidents. Benefits also may include an improved compliance record, improved worker safety and a healthier work environment. Intangible benefits may include better relations with regulatory agencies, improved employee morale, favorable publicity and a stronger community reputation for integrity.

The *Environmental Self-Assessment for the Food Processing Industry* provides extremely useful information, but there is no guarantee, expressed or implied, that the information will identify all possible conditions and opportunities for pollution prevention. Compliance with environmental and occupational safety and health regulations is not the focus of this document and is the responsibility of the individual food processing facility.

SELF-ASSESSMENT CHECKLISTS

Review each question carefully and check the appropriate box. A *yes* answer indicates that your facility has incorporated pollution prevention, waste reduction and recycling measures into its day-to-day activities. A *no* or *can't determine* answer indicates that an opportunity to prevent or reduce pollution may exist. Make notes of the questions that received a *no* or *can't determine* response.

Use this self-assessment to create a working list of pollution prevention, waste reduction and recycling opportunities that should be explored in greater detail. You are encouraged to consult with the Department of Environmental Conservation's regional multimedia pollution prevention (M2P2) coordinators, the Pollution Prevention Unit located in Albany, trade associations, vendors and environmental engineers for additional information and assistance (see "A Resource Guide," page 15, for a list of agencies and organizations that provide technical assistance on pollution prevention).

All pollution prevention activities should be carried out in accordance with food safety requirements and regulations.

Reducing, Recycling and Preventing Packaging Waste

Re-use and recycling programs can significantly reduce the amount of waste that your food processing facility has to ship off-site for disposal, in addition to conserving our natural resources and eliminating the generation of hazardous waste that would otherwise result.

	Yes	No	Can't Determine	Not Applicable
Has your facility conducted a waste audit identifying the types and amounts of waste generated on-site; locations and reasons why they are generated; cost of disposal; and economical waste reduction solutions?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have suppliers been encouraged to offer products with reduced or minimal packaging?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have suppliers been encouraged to offer products with reusable packaging?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If you ship products, have returnable and reusable containers or the use of fewer layers of packaging materials been considered?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you inspect all shipments of materials at time of delivery and return unacceptable and damaged materials to the supplier?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Yes	No	Can't Determine	Not Applicable
Do you choose products that come in reusable packaging, concentrated forms or that are offered in bulk quantities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you date all food products and use the first-in, first-out method of inventory control?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are all containers and packages clearly labeled to indicate contents, storage, handling and expiration dates?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does a waste reduction program exist that outlines policies and procedures for dealing with waste and assigns responsibilities for all waste-related activities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is waste reduction training given to all employees? (Training should be repeated on a regular basis and should teach waste awareness, the impact of various food wastes on the wastewater stream and proper waste-handling methods.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are employees trained in the concepts of pollution prevention and how to perform their jobs in order to reduce waste and promote recycling?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does your shop purchase smaller containers of infrequently used materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is metal, paper, glass and recyclable plastic segregated for recycling?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are your packaging materials and other supplies made from recycled materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are paper products such as toilet paper, paper towels, napkins and bags made from recycled paper?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<i>Lunch Room/Cafeteria</i>	Yes	No	Can't Determine	Not Applicable
Do you have recycling containers conveniently located in the employee eating area for empty beverage containers?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have reusable trays, dishware and silverware been substituted for disposable products?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you use refillable dispensers for ketchup, mustard and other condiments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is the grease from pots, pans, grills, and deep fat fryers kept out of the drains and handled separately?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Composting, Land Spreading, Rendering and Animal Feed

Composting of organic waste can be an effective waste reduction measure by preventing organic materials from entering the waste stream. It is a natural process by which organic materials are allowed to decompose under controlled conditions. Compost is used for fertilizing and conditioning soil. In addition, offering certain food by-products for use as animal feed is an economical and environmentally sound way for food processors to reduce waste discharges and waste management costs. Another possible method for reducing waste disposal while enhancing soil conditions is the landspreading of organic waste. And last, the rendering of oil, grease, fat, and meat and bone cuttings, which results in tallow, grease, and protein meals, is another waste disposal reduction method.

	Yes	No	Can't Determine	Not Applicable
Have you considered on-site composting of kitchen and cafeteria scraps except for meat, fish, bones and fatty foods to reduce the amount of materials requiring disposal? (For more information, contact the NYSDEC, Division of Solid & Hazardous Materials, Bureau of Waste Reduction & Recycling at (518) 457-7337.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Yes	No	Can't Determine	Not Applicable
If on-site composting is not possible, have you considered collecting and sending food scraps to a food waste composting facility? (Check with the NYSDEC, Division of Solid & Hazardous Materials, Bureau of Waste Reduction & Recycling at (518) 457-7337.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you considered using a rendering service for your waste fat, grease, oil, meat and bone cuttings? (Check with NYS Agriculture & Markets, Division of Food Safety and Inspection at (518) 457-5382 for more information.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you considered land spreading food wastes which would keep them out of the landfill while enhancing soil conditions? (Check with the NYSDEC Division of Water, Bureau of Water Permits at (518) 457-0656 and the NYSDEC, Division of Solid & Hazardous Materials, Waste Reduction & Recycling at (518) 457-7337 for more information.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does your facility collect food by-products (including liquid food waste) for local farmers to use as animal feed or for animal food manufacturing? (Check with NYS Agriculture & Markets, Division of Food Safety and Inspection at (518) 457-5382 and the NYSDEC, Division of Solid & Hazardous Materials, Bureau of Waste Reduction & Recycling at (518) 457-7337 for information regarding the laws governing food for animal feed.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Land spreading food wastes is an effective waste reduction measure.



Food Processing Operations and Cleanup Procedures

Often the implementation of cost-effective modifications or improvements to operating and cleanup procedures will result in process operations running more efficiently and less waste being generated. This can be accomplished through improvements in handling/transfer procedures, inventory control, spill/leak management, equipment maintenance and cleanup procedures. When conducting the self-assessment, keep in mind the following pollution prevention ideas and practices, which can be applied to food processing facilities of all sizes.

	Yes	No	Not Applicable	Can't Determine
Have the types and amounts of edible and inedible food waste that is generated at your facility been determined?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are excess edible foods kept separate from inedible food wastes and routed to a local food bank or food donor program?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are inedible food wastes used for composting, rendering, landspreading or animal feed kept separate from industrial wastes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you considered using dedicated mixing lines for certain products to reduce change-over cleanups?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does spillage occur from overfilling or mixing activities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To prevent waste product from entering drains and to reduce the use of cleanup materials, are catch basins being used for collection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are bins or containers available for inedible food waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have opportunities been explored for recirculating clean rinse water? (i.e., collecting rinse water for use as a prewash for the next cleaning cycle).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are there screens on floor drains to prevent the release of food by-products to the sewer?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Yes	No	Not Applicable	Can't Determine
Prior to the use of water for cleanup, do you use dry cleanup procedures (i.e., scrapers, shovels, brooms, squeegees, or absorbents) to prevent the bulk of food materials from being washed down drains? (Food materials discharged to the sewer can cause an increase of biological oxygen demand (BOD) to wastewater. The higher the BOD level, the more treatment required at the sewage treatment plant. The sewage treatment plant often times adds a surcharge to wastewater which exceeds a set BOD limit.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
When water is needed for cleanup, are high-pressure spray washes used in order to conserve water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are hoses that are used for cleanup equipped with nozzles enabling easy shut off?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have either non-toxic or less-toxic cleaning supplies been identified? And used?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
When detergents/cleaners are needed, have you explored the possibility of using one multi-purpose cleaner rather than several different cleaners that are job specific?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If you discharge to a municipal sewer, have you contacted the local wastewater treatment plant for possible requirements concerning the need for grease interceptors and grease trap management? (Grease can accumulate on sewer pipes and may obstruct flow in the lines.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you determined whether your food processing facility is required to have a State Pollutant Discharge Elimination System (SPDES) General Permit for storm water discharges? (Contact the NYSDEC Division of Water, Bureau of Water Permits at (518) 457-0624 for further information.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Yes	No	Not Applicable	Can't Determine
Are you aware that commercial bakeries may be subject to the NYSDEC air permitting requirements because of volatile organic compound (ethanol is produced when yeast ferments) emissions? (The NYSDEC Air Resources regulations define "commercial" bakeries as those who derive <u>less than 50%</u> of their revenues <u>from on-site retail sales</u> . For further information, contact the NYSDEC Division of Air Resources at (518) 457-7320.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Preventive Maintenance

One of the best means of reducing the amount water and the waste resulting from process material and product loss is through better preventive maintenance. In addition, preventive maintenance can reduce the levels of biological oxygen demand (BOD), suspended solids, oil, grease and fats that currently are present in your wastewater discharge. These wastewater characteristics adversely affect a Publicly Owned Treatment Works (POTWs) treatment capability and may be costing your facility more in discharge fees.

	Yes	No	Not Applicable	Can't Determine
Are storage and work areas clean and well organized?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are procedures and equipment in place to prevent raw material or product spills from occurring in outside areas?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is there loss of product due to improper or malfunctioning equipment (i.e., leaking lines, pumps, valves)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is equipment such as refrigerators, freezers, or air conditioners checked and serviced on a regular basis to avoid breakdowns and reduce energy costs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Yes	No	Not Applicable	Can't Determine
Can lighting or refrigeration systems be upgraded to increase energy efficiency? (The New York State Energy Research and Development Authority (NYSERDA) works with businesses, institutions, and municipalities to provide energy engineering and technical assistance. More information can be found on http://www.nyserda.org . In addition, the Environmental Protection Agency's Energy Star Buildings Partnership promotes energy efficiency in buildings. Participants are provided with unbiased technical information, customized support services, public relations assistance, and access to a broad range of resources and tools. More information can be found on http://www.epa.gov/buildings/esbhome)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are you aware of the regulations issued under section 608 of the Clean Air Act pertaining to the recycling of refrigerants in stationary systems and to end the practice of venting refrigerants to the air? (Information on the regulations and related fact sheets are available from the EPA Stratospheric Ozone Hotline at 1-800-296-1996 and on their website at www.epa.gov/spdpublic/title6/608/608.html .)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you have a water conservation program which includes items like shutting off water during breaks to prevent it from being left on while unattended?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have all leaks in pumps, piping, valves and tanks been repaired to conserve water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are the storage containers for food material (i.e., waste, product or raw material) rigid, watertight and rodent proof?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Yes	No	Not Applicable	Can't Determine
Is your outside storage area for waste containers, product storage bins or cleaning chemicals covered and paved to reduce cleanup and potential discharges to storm drains? (This can be accomplished by constructing a roofed storage area or even using a tarp to cover drums.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is your outside storage area for products, chemicals and waste designed to prevent runoff into storm drains?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you considered storing materials inside a building?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are dumpsters and compactors inspected for leaks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have employees been trained in the NYSDEC chemical and petroleum spill reporting requirements? (Contact your regional NYSDEC office for spill reporting guidance.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Pesticide Use

The control of insects, weeds, and other pests in and around your facility should have minimal impact on human health, the environment, and non-target organisms. The NYS Department of Environmental Conservation (NYSDEC) is the lead agency in New York for the regulation of the sale and use of pesticides. NYSDEC conducts public outreach activities and regulatory compliance assistance activities. Questions on pest management and the state pesticide regulatory program can be directed to the NYSDEC Central Office, Bureau of Pesticides Management, (518) 457-0917 or to any of the NYSDEC regional offices. (See the Resource Guide for a listing of NYSDEC Regional Offices.)

	Yes	No	Not Applicable	Can't Determine
Is your facility aware of NYSDEC regulatory and Commercial Pesticide Certification requirements in the Food Processing Category for all pesticide applications?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Yes	No	Not Applicable	Can't Determine
Have you developed and implemented an integrated pest management plan (IPM) that reduces to the greatest extent possible the use of chemical pesticides? (An integrated pest management plan is a systematic approach to managing pests that focuses on long-term prevention or suppression with minimal impact on human health, the environment, and non-target organisms. Contact NYSDEC, Bureau of Pesticides Management at (518) 457-0917 for an IPM resource guide.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have employees been instructed in the facility's integrated pest-management policy and recognizing pest problems?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is it possible to reduce the amount of pesticide applications and/or use nonchemical pest control methods (i.e., trapping, exclusion)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are the food preparation and storage areas within the facility clean and free from residues that would attract or harbor pests?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have all the structures on the premises been inspected to identify needed repairs that could reduce or prevent pest infestations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have litter, waste refuse and uncut weeds and grass within the immediate vicinity of the building been removed to reduce attraction and harborage of rodents and insects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is there proper water drainage around the building to prevent breeding grounds for insects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Food Banks

Donating non-perishable and unspoiled perishable food to a local food bank, shelter or soup kitchen is a beneficial way to help the community while also reducing food wastes. Excess food for donation can come from the employee cafeteria, special events, produce salvage, and aesthetically damaged, unsaleable food products that are otherwise safe to eat.

	Yes	No	Not Applicable	Can't Determine
Does your facility donate extra packaged products to a food bank, shelter or soup kitchen?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does your facility donate its unused food left over from conferences and banquet to a local food bank? (See Appendix A for a list of food banks.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

P2 Pays

In 1991, the Anheuser-Busch Brewery in Baldwinsville, New York installed an innovative technology known as the Bio-Energy Recovery System (BERS). Before installing the BERS, the Baldwinsville brewery treated the waste from the brewing process by using only aerobic bacteria. This conventional system required significant quantities of electricity to pump oxygen into the wastewater so that the aerobic bacteria could function.

The BERS works by pumping wastewater into enclosed tanks that contain anaerobic biomass, which consumes the carbohydrates, proteins, and other organic materials produced by the brewing process. These materials are converted to biogas, primarily methane, which is piped to the brewery's boilers for fuel. The methane is used in the brewery's boilers and accounts for 10.5 percent of the boiler's fuel needs. The anaerobic process also reduces the release of carbon dioxide and the production of sludge from the treatment process. In addition, remaining wastewater sludge from the treatment system is composted on-site, and then sold as a soil conditioner for landscapers, developers, gardeners, and athletic field needs in the Northeast.

This advanced technology was developed by Anheuser-Busch in the 1980s; the company has installed the system at eight of its twelve domestic breweries, as well as both of its two overseas breweries. For more information on BERS and other environmental programs, visit www.abenvironment.com

NEXT STEPS

Following completion of the self-assessment, you should have a list of operational areas where there are opportunities for pollution prevention. The next step is to obtain additional information to allow you to explore these opportunities and to determine which are cost effective and technically feasible without reducing service quality. A good first step is to consult the publications listed under references. You should check with vendors and request information about supplies and equipment that are more “environmentally friendly.” Other sources of information regarding pollution prevention are trade organizations and local, state and federal programs listed under the “A Resource Guide” on page 16.

RESOURCE GUIDE

The following organizations provide technical assistance, publish information, conduct workshops and conferences, and provide telephone and on-site information on pollution prevention and better management of air, water, solid and hazardous waste issues.

Trade Organizations

New York Apple Association

7645 Main Street
P.O. Box 350
Fishers, New York 14450-0350
Phone: (716) 924-2171
Fax: (716) 924-1629
Internet: <http://www.applecountry.com>

American Frozen Food Institute

2000 Corporate Ridge, Suite 1000
McLean, Virginia 22102
Phone: (703) 821-0770
Fax: (703) 821-1350
Internet: <http://www.affi.com>

New York State Farm Bureau

RT 9W, P.O. Box 992
Glenmont, New York 12077-0992
Phone: (518) 436-8495
Internet: <http://www.nyfb.org>

National Food Processors Association

1350 I Street, NW Suite 300
Washington, DC 20005
Phone: (202) 639-5900
Fax: (202) 639-5932
Internet: <http://www.nfpa-food.org>

New York State Restaurant Association

455 New Karner Road
Albany, New York 12205
Phone: (518) 452-4222 or (800) 452-5212
Internet: <http://www.nysra.org>

American Meat Institute

1700 North Moore Street, Suite 1600
Arlington, Virginia 22209
Phone: (703) 841-2400
Fax: (703) 527-0938
Internet: <http://www.meatami.org>

American Dairy Products Institute

300 West Washington Street, Suite 400
Chicago, Illinois 60606-1704
Phone: (312) 782-4888
Fax: (312) 782-5299
Internet:
<http://www.americandairyproducts.com>

United Fresh Fruit & Vegetable Association

727 North Washington Street
Alexandria, VA 22314
Phone: (703) 836-3410
Fax: (703) 836-7745
Internet: <http://www.uffva.org>

National Renderers Association

801 N. Fairfax Street, Suite 207
Alexandria, Virginia 22314
Phone: (703) 683-0155
Fax: (703) 683-2626
Internet: <http://www.renderers.org>

Local Assistance

NEW YORK STATE:

University at Buffalo
Center for Integrated Waste Management
Jarvis Hall, Room 207
Buffalo, NY 14260-4400
Phone: (716) 645-3446, Ext. 2340
Fax: (716) 645-3667

METROPOLITAN AREA:

NYC Dept. of Environmental Protection
Environmental Economic Development
Assistance Unit
59-17 Junction Boulevard, 11th Floor
Corona, NY 11368-5107
Phone: (718) 595-4462
Fax: (718) 595-4479

MONROE COUNTY:

Monroe County Department of
Environmental Services
444 East Henrietta Road, Bldg., #15
Rochester, NY 14620
Phone: (716) 760-7523
Fax: (716) 324-1213

ONONDAGA COUNTY:

Onondaga County Resources Recovery
Agency
100 Elwood Davis Road
North Syracuse, NY 13212
Phone: (315) 453-2866
Fax: (315) 453-2872
Hotline #: (315) 453-2870

BROOME COUNTY:

Broome County
Division of Solid Waste Management
Edwin L. Crawford County Office Building
P.O. Box 1766
44 Hawley Street
Binghamton, NY 13902
Phone: (607) 778-2250
Fax: (607) 778-2395

ERIE COUNTY:

Erie County Department
of Environment & Planning
Office of Pollution Prevention
95 Franklin Street, Room 1077
Buffalo, NY 14202-3973
Phone: (716) 858-7583
Fax: (716) 858-7713

CHAUTAUQUA, CATTARAUGUS AND ALLEGANY COUNTIES:

The Southwestern New York
Environmental Compliance Network
Jamestown Community College
525 Falconer Street, P.O. Box 20
Jamestown, NY 14702-0020
Phone: (716) 665-5220, Ext. 446
Fax: (716) 665-2585

The Center for Business and Industry
SUNY at Fredonia
Lograsso Hall
Fredonia, NY 14063
Phone: (716) 673-3177
Fax: (716) 673-3175

New York State Department of Environmental Conservation

Pollution Prevention Unit

Phone: (518) 457-2553

Small Quantity Generator P2 Hotline

(800) 462-6553, Out of State: (518) 485-8471

This technical assistance unit provides P2 information, develops industry sector manuals and other publications, offers workshops/training, holds annual pollution prevention conferences, coordinates NYS Governor's P2 Awards, and prepares annual toxic release inventory (TRI) reports.

<http://www.dec.state.ny.us/website/ppu>

Division of Solid and Hazardous Materials

Bureau of Hazardous Waste Management

(518) 485-8988

Responsible for making hazardous waste determinations, for reviewing hazardous waste reduction plans, hazardous waste permitting, and for hazardous waste compliance.

<http://www.dec.state.ny.us/website/dshm>

Bureau of Waste Reduction & Recycling

(518) 457-7337

Responsible for the beneficial use program, the composting program, the waste tire program, and other solid waste recycling and waste reduction issues.

<http://www.dec.state.ny.us/website/dshm/redrecy>

Bureau of Pesticide Management

(518) 457-0917

The NYSDEC is the lead agency in New York for regulating the sale and use of pesticides. Public outreach activities and regulatory compliance assistance activities are conducted.

<http://www.dec.state.ny.us/website/pesticid/pesticid.htm>

Division of Water

Bureau of Water Permits

(518) 457-0656

Responsible for managing the State Pollutant Discharge Elimination System (SPDES) permits, the SPDES program for storm water discharges, the water resources programs and the municipal water supply permits.

<http://www.dec.state.ny.us/website/dow>

Division of Environmental Remediation

Bureau of Spill Prevention and Response

(518) 457-9412

Responsible for the registration of tanks, presenting workshops and training, developing publications, receiving spill notifications, and serves as an information clearing house for industries and the public.

<http://www.dec.state.ny.us/website/der>

Spill Response Hotline

(800) 457-7362 (within NYS)

(518) 457-7362 (outside of NYS)

To report releases of petroleum products or hazardous substances to air, land or water in New York State. Regulations require reporting within two hours if certain conditions are not met. Also, the National Response Center should be notified (see listing on page 20).

Petroleum Bulk Storage Hotline

(888) 457-4351

Provides technical assistance on chemical and petroleum aboveground and underground storage tanks.

NYSDEC - Regional Office

REGION 1

Nassau & Suffolk Counties
SUNY Campus
Loop Road, Building 40
Stony Brook, NY 11790-2356
Phone: (516) 444-0354

REGION 2

*Bronx, Kings, New York, Queens &
Richmond Counties*
1 Hunters Point Plaza
47-40 21st Street
Long Island City, NY 11101-5407
Phone: (718) 482-4900

REGION 3

*Dutchess, Orange, Putnam, Rockland,
Sullivan, Ulster & Westchester Counties*
21 South Putt Corners Road
New Paltz, NY 12561-1696
Phone: (914) 256-3000

REGION 4

*Albany, Columbia, Delaware, Greene,
Montgomery, Otsego, Rensselaer,
Schenectady & Schoharie Counties*
1150 Westcott Road
Schenectady, NY 12306-2014
Phone: (518) 357-2234

REGION 9

*Allegany, Cattaraugus, Chautauqua,
Erie, Niagara, & Wyoming Counties*
270 Michigan Ave.
Buffalo, NY 14203-2999
Phone: (716) 851-7000

REGION 5

*Clinton, Essex, Franklin, Fulton, Hamilton,
Saratoga, Warren & Washington Counties*
Route 86, PO Box 296
Ray Brook, NY 12977-0296
Phone: (518) 897-1200

REGION 6

*Herkimer, Jefferson, Lewis,
Oneida & St. Lawrence Counties*
State Office Building
317 Washington Street
Watertown, NY 13601
Phone: (315) 785-2238

REGION 7

*Broome, Cayuga, Chenango, Cortland,
Madison, Onondaga, Oswego,
Tioga & Tompkins Counties*
615 Erie Blvd. W.
Syracuse, NY 13204-2400
Phone: (315) 426-7400

REGION 8

*Chemung, Genesee, Livingston, Monroe,
Ontario, Orleans, Schuyler, Seneca,
Steuben, Wayne & Yates Counties*
6274 East Avon-Lima Road
Avon, NY 14414
Phone: (716) 226-2466

Other State Agencies

Empire State Development (ESD),

Small Business Division,
Clean Air Act Small Business Ombudsman
633 3rd Avenue, 32nd Floor
New York, NY 10017
Phone: (800) STATENY
Internet: <http://www.empire.state.ny.us>
Assists in determining how regulations may affect a business and in communicating with state regulatory agencies; sets up workshops; and handles complaints.

NYS Energy Research & Development Authority (NYSERDA)

Corporate Plaza West
286 Washington Avenue Extension
Albany, New York 12203-6399
Phone: (518) 862-1090
Fax: (518) 862-1091
Internet: <http://www.nyserda.org>
Assesses industrial process and building system improvements; assists businesses in identifying existing technologies and equipment to reduce energy costs; and helps secure funding to implement energy efficient projects. Provides additional services aimed at assisting businesses in NYS.

NYS Environmental Facilities Corporation (EFC)

Small Business Assistance Program
50 Wolf Road, Albany, NY 12205
Hotline: (800) 780-7227
Phone: (518) 457-9135
Fax: (518) 485-8494
Provides fee-free technical assistance; interprets requirements; provides advice on pollution prevention and control strategies; and conducts environmental audits. Also provides fee-based contractual technical advisory services for a broad range of environmental issues.

NYS Department of Agriculture & Markets

1 Winners Circle
Albany, New York 12235
Phone: (518) 457-3880
Internet: <http://www.agmkt.state.ny.us>
Enforces New York State Agriculture and Markets Laws and Regulations concerning food safety and labeling, farm products inspection activities and the manufacture and distribution of animal, pet and speciality pet food.

Federal Assistance

Pollution Prevention Information Clearinghouse

Phone: (202) 260-1023

Fax: (202) 260-9780

E-mail: ppic@epamail.epa.gov

Provides a library and an electronic bulletin board dedicated to information on pollution prevention.

U.S. EPA Region II Compliance Assistance & Program Support Branch

290 Broadway, 22nd Floor

New York, NY 10007-1866

Phone: (212) 637-3268

Provides technical assistance and guidance on compliance, pollution prevention and waste minimization issues on a multimedia basis.

U.S. EPA Asbestos and Small Business Ombudsman Hotline

Phone: (800) 368-5888

Helps private citizens, small businesses and smaller communities with questions on all EPA program aspects.

National Response Center

Phone: (800) 424-8802

EPA's 24-hour hotline for reporting oil and chemical spills to the federal government. This hotline is operated by the U.S. Coast Guard.

RCRA/Superfund/EPCRA Hotline

Phone: (800) 424-9346

Provides information on matters related to solid waste, hazardous waste, or underground storage tanks. EPA publications can also be ordered.

Resources on the Internet

Organization	Internet Address
UFDA Center for Food Safety and Applied Nutrition	http://vm.cfsan.fda.gov
National Restaurant Association	http://www.restaurant.org
Empire State Restaurant & Tavern Association	http://www.esrta.org
Integrated Pest Management in New York State	http://www.nysaes.cornell.edu/ipmnet/ny
Food Processors Institute	http://www.fpi-food.org
US Environmental Protection Agency Office of Solid Waste	http://www.epa.gov/epaoswer/non-hw/reduce/wastenot.htm
United States Department of Agriculture	http://www.usda.gov
Cornell Cooperative Extension	http://www.cce.cornell.edu
American Dairy Products Institute	http://americandairyproducts.com
National Pollution Prevention Roundtable	http://www.es.epa.gov/nppr
Tellus Institute	http://www.tellus.org
Waste Reduction Resource Center	http://www.owr.ehnr.state.nc.us
<i>NEW YORK STATE</i>	
Empire State Development Services to Business	http://www.empire.state.ny.us
NYS Department of Environmental Conservation	http://www.dec.state.ny.us
NYS Environmental Facilities Corporation	http://www.nysefc.org
<i>U.S. ENVIRONMENTAL PROTECTION AGENCY</i>	
Common Sense Initiative	http://www.epa.gov/commonsense
Design for the Environment	http://earth2.epa.gov/dfore
EnviroSenSe	http://epa.gov/envirosense/nppr/index.html
Office of Mobile Sources	http://www.epa.gov/omswww
Office of Underground Storage Tanks	http://www.epa.gov/swrust1
Small Business Assistance Program	http://www.epa.gov/tnn/sbap
Technology Transfer Network	http://www.epa.gov/tnn

U.S. DEPARTMENT OF ENERGY

Pollution Prevention Information Clearinghouse

<http://epic.er.doe.gov/epic>

PACIFIC NORTHWEST LABORATORIES

Green Guide

<http://bbs.pnl.gov:2080/esp/greenguide>

Pollution Prevention Resource Center

<http://pprc.pnl.gov/pprc>

Appendix A - List of Food Banks and Food Providers

(This is not a complete listing of food banks or food providers; check your local phone directory for others that may be in your area.)

FOODLINK, Inc.
56 and 100 West Avenue
Rochester, New York 14611
Phone: (716) 328-3380
Fax: (716) 328-9951
Internet: <http://www.foodlink.org>

The Food Bank of Western New York
91-95 Holt Street
Buffalo, New York 14206-2293
Phone: (716) 852-1305
Fax: (716) 852-1305
Internet: <http://www.fbwny.org>

Food Pantries - Capital District
340 1st Street
Albany, New York 12206-3100
Phone: (518) 462-3459

Food Bank
Union Street
Utica, New York 13501-7213
Phone: (315) 724-7213

Food for Survival, Inc.
355 Food Center Drive
Bronx, New York 10474-7000
Phone: (718) 991-4300
Fax: (718) 893-3442

Food Patch, Inc.
358 Saw Mill River Road #13
Millwood, New York 10546-1045
Phone: (914) 923-1100
Fax: (914) 923-1198

Food Bank - Southern Tier
945 County Road 64
Elmira, New York 14903-6061
Phone: (607) 796-6061
Fax: (607) 796-6028

City Harvest
159 W 25th Street, Floor 10
New York, New York 10001-7201
Phone: (212) 463-0456
Fax: (212) 727-2439

Food Bank of the Hudson Valley
2010 Route 9W
Milton, New York 12547-5021
Phone: (914) 795-2325

Food Shuttle of Western New York, Inc.
100 St. Gregory Court
Williamsville, New York 14221
Phone: (716) 688-2527

FOODSHARE - People to People
261 Mountainview Avenue
Nyack, New York 10960
Phone: (914) 358-4606
Fax: (914) 353-3966

Long Island Cares Regional Food Bank
Pilgrim Center
West Brentwood, New York 11717
Phone: (516) 435-0454
Fax: (516) 273-2184

Regional Food Bank of Northeastern New York
965 Albany-Shaker Road
Latham, New York 12110-1478
Phone: (518) 786-3691
Fax: (518) 786-3004

C.H.O.W.
81 Main Street
Binghamton, New York 13905
Phone: (607) 724-9130
Fax: (607) 724-9148

Heart and Soul
1501 Pierce Ave.
Niagara Falls, New York 14301
Phone: (914) 358-4606
Fax: (914) 353-4780

Island Harvest
199 Second Street
Mineola, New York 11501
Phone: (561) 294-8528
Fax: (561) 747-6843

Food Bank of Central New York
6970 Schuyler Road
East Syracuse, New York 1305-9749
Phone: (315) 437-1899
Fax: (15) 434-9629
Internet: <http://www.foodbankcny.org>

REFERENCES

Carawan, Roy E., North Carolina State University (March 1996). *Pollution Prevention Pays in Food Processing, Reducing Water Use and Wastewater in Food Processing Plants, How One Company Cuts Costs*. Publication Number: CD-35. From: North Carolina Cooperative Extension Service, Water Quality & Waste Management.

Delaware Department of Natural Resources and Environmental Control. *A Pollution Prevention Guide for Food Processors, Three Rs for the 90s: Reduce, Reuse, Recycle*.

Derr, Donn A.; Dhillon, Pritam S. (April 1997). "Keeping the Options Open: The Economics of Recycling Food Residuals." *BIOCYCLE*, pages 55-56.

Massachusetts Water Resources Authority. *Water Conservation Bulletin 5 - Restaurants*. From: Massachusetts Water Resources Authority, Charlestown Navy Yard, 100 First Avenue, Boston, MA 02129.

Massachusetts Water Resources Authority. *Water Conservation Bulletin 3 - Beverage/Food Processing Industry*. Massachusetts Water Resources Authority, Charlestown Navy Yard, 100 First Avenue, Boston, MA 02129.

Minnesota Technical Assistance Program, University of Minnesota, Fact Sheets:

- *Commercial Food Production; Source Reduction and Management Alternatives*
- *Commercial Food Wastes; Composting and Landspreading*

New York State Department of Environmental Conservation (1997) *Waste Reduction at New York State Supermarkets*. NYS Department of Environmental Conservation, Division of Solid & Hazardous Materials, Bureau of Waste Reduction & Recycling, 50 Wolf Road, Albany, NY 12233-7253.

North Carolina Department of Environment and Natural Resources (October 1999). *A Fact Sheet for Managing Food Materials*. North Carolina Department of Environment and Natural Resources, Division of Pollution Prevention and Environmental Assistance, 1639 Mail Service Center, Raleigh, NC 27699-1639.

Richardson, Stephanie, North Carolina Pollution Prevention Program. *Pollution Prevention Pays for the Food Processing Industry*.

Richardson, Stephanie, North Carolina Pollution Prevention Program. *Waste Reduction in Food Processing - A People Management Issue*.

Shober, Robert T., Campbell Soup Company, Camden, NJ (1998 Food Processing Waste Conference). *Water Conservation - Waste Load Reduction in Food Processing Facilities*.

U.S. Environmental Protection Agency, Waste Wise Program, Industry Sector Fact Sheet: *Food Manufacturing/Processing Industry (April 1999)*.

U.S. Environmental Protection Agency (September 1996). *Managing Food Scraps as Animal Feed*, #EPA 530-F-96-037.

U.S. Environmental Protection Agency (September 1996). *Donating Surplus Food to the Needy*. #EPA 530-F-96-038.

U.S. Environmental Protection Agency (September 1998). *Don't Throw Away That Food: Strategies for Record-Setting Waste Reduction*. #EPA 530-F-98-023.

U.S. Environmental Protection Agency: U.S. Department of Agriculture. *Waste Not, Want Not: Feeding the Hungry and Reducing Solid Waste Through Food Recovery*, #EPA 530-R-99-040.

U.S. Environmental Protection Agency (September 1998). *EPCRA Section 313 Reporting Guidance for Food Processors*. #EPA 745-R-98-011.

U.S. Environmental Protection Agency (March 1999). *Multimedia Environmental Compliance Guide for Food Processors*. #EPA 305-B-99-005.

Youde, Jeffrey; Prenguber, Bruce (October 1991). "Classifying the Food Waste Stream," *BIOCYCLE*, pages 70-71.

Internet Resources for the Food Processing Industry

Bluebird Foods LTD Case study on Bluebird Foods has turned water and other materials once treated as waste into reusable resources. Solid waste collection and disposal charges decreased by more than 56%. Water savings are over \$100,000 per annum.
(<http://www.mfe.govt.nz/management/rma/cpcases/case21a.htm>)

The BOD Diet Plan: Waste Management Tips for Breaded Food Plant Employees Roy E. Carawan Food Science Extension Specialist. North Carolina State University. March 1996.
(<http://www.bae.ncsu.edu/bae/programs/extension/publicat/wqwm/cd36.html>)

Clean Technologies in U.S. Industries: Focus on Food Processing This report gives a brief overview of the state of the U.S. food-processing industry, with an emphasis on its efforts to incorporate pollution prevention and clean technologies into its processing operations.
(<http://www.p2pays.org/ref/09/08853.htm>)

DB Breweries Case study - packaging material waste has been reduced by employing "good housekeeping" methods. Packaging wastage has been reduced from 2.5% to about 0.6% since July 1991, thereby saving more than \$250,000 per year.
(<http://www.mfe.govt.nz/management/rma/cpcases/case21b.htm>)

Don't Throw Away That Food: Strategies for Record-Setting Waste Reduction This fact sheet is oriented toward commercial and institutional food discard generators, and highlights record-setting food recovery programs.
(<http://www.epa.gov/epaoswer/non-hw/reduce/food/foodmain.pdf>)

Environmental Compliance and Pollution Prevention Guide for the Food Processing Industry New York State Department of Environmental Conservation Pollution Prevention Unit. March 2001. (www.dec.state.ny.us/website/ppu/ecppfood.pdf)

Environmental Self-Assessment for the Food Processing Industry New York State Department of Environmental Conservation Pollution Prevention Unit. March 2001.
(www.dec.state.ny.us/website/ppu/esafood.pdf)

Food Processing Industry Resources A Technical and Regulatory Information, and Research and Project Database page is included in this site. Pacific Northwest Pollution Prevention Resource Center. (www.pprc.org/pprc.sbap.food.htm).

The Food Processing Industry: Improvement of Resource Efficiency and Environmental Performance This site provides an overview of cleaner production in the food processing industry, but also many useful links to specific areas in food processing.
(<http://www.cleanerproduction.com/industries/FoodProc.html>)

Griffins Foods LTD Case study - water from the latter stages of the potato crisp making process is filtered and reused within the process. Savings on water charges are \$24,000 per year, and savings on discharge charges are \$80,000 per year. Water discharges have been reduced by more than 78%. (<http://www.mfe.govt.nz/management/rma/cpcases/case21d.htm>)

Great Lakes Regional Pollution Prevention Roundtable. Documents and resources for food processing. (<http://www.glrppr.org/contacts/gltopichub.cfm?sectorid=23>)

A Pollution Prevention Guide for Food Processors Delaware Department of Natural Resources and Environmental Control. December, 1996. (www.dnrec.state.de.us/del-proc.htm).

Reducing Water Use and Wastewater in Food Processing Plants. Roy E. Carawan. Food Science Extension Specialist. North Carolina State University. March 1996.
(www.p2pays.org/ref/01/00039.htm)

Waste Reduction in Food Processing This website contains links to many other food processing websites, manuals, articles and reports, fact sheets, and case studies.
(<http://wrrc.p2pays.org/industry/foodprocess.htm>)